AMENDMENTS TO THE CLAIMS

1. **(Original)** An isolated stem cell population wherein said stem cells are capable of self regeneration, capable of differentiation into ectodermal, mesodermal and endodermal cells and capable of adhering to tissue-culture grade plastic.

2. **(Currently amended)** The cell population according to claim 1, wherein said stem cells are further ~~characterised by the ability of the cells~~ able to adhere to tissue-culture grade plastic within 3 hours after isolation, and to remain adherent for at least 72 hours.

3. **(Currently amended)** The stem cell population according to claim 1 ~~or claim 2~~ wherein the cells are $CD33^-$, $CD38^-$, HLA-DR^-, $CD3^-$ and $CD19^-$.

4. **(Currently amended)** The stem cell population according to ~~any preceding~~ claim 1 which is enriched for cells which are also Thy-1^+.

5. **(Currently amended)** The stem cell population according to ~~any preceding~~ claim 1 which is enriched for cells which are also $AC133^+$ and/or c-met^+.

6. **(Currently amended)** The stem cell population according to ~~any preceding~~ claim 1 that expresses genes encoding Rex-1, Oct 4, Nanog, CD34, CD133, PECAM, VWF, Tal-1, CXCR4, Angiopoietin 1, Tie 2, TNNT1, Desmin, Nebulin, Connexin-43, GATA-4, VEGF, KDR, Angiopoietin 2, ICAM-2, VE cadherin, Alpha-1-antitrypsin, Cytokeratin 18, Nestin, Vimentin and c-met.

7. **(Currently amended)** The stem cell population according to ~~any preceding~~ claim 1 whose progeny produced after culturing express genes encoding CD133, PECAM, VWF, Tal-1, CXCR4, Angiopoietin-1, Nebulin, Troponin 1, VEGF, Angiopoietin 2, ICAM 2, Alpha-1-antitrypsin, Cytokeratin 18, LDLR, Albumin, HGF, transferrin, Alphafeto protein, Pax-6, Pdx=1, Insulin, IGF-1, NeuroD-1 and NGN3.

8. **(Currently amended)** The stem cell population according to ~~any preceding~~ claim 1 whose progeny express genes involved in insulin production.

9. **(Currently amended)** The stem cell population according to Claim 1, ~~any one of claims 1-8~~ wherein the stem cells are adult stem cells.

10. **(Currently amended)** The stem cell population according to Claim 1, ~~any one of claims 1-8~~ wherein the stem cell population comprises fetal cells obtained from a non-fetal sample such as an umbilical cord sample.

11. **(Currently amended)** The stem cell population according to ~~any preceding~~ claim 1 wherein the cells have the characteristics of those deposited with ECACC under accession No. 04092401.

12. **(Currently amended)** The stem cell population according to ~~any preceding~~ claim 1 which is mammalian in origin.

13. **(Currently amended)** The stem cell population according to ~~any preceding~~ claim 1 which is human in origin.

14. **(Currently amended)** The stem cell population according to ~~any one of claims 1-12~~ claim 12 which is murine, equine or bovine in origin.

15. **(Currently amended)** The stem cell population according to ~~any one of claims 1-12~~ claim 12 which is isolated or derived from a sample taken from a companion animal.

16. **(Currently amended)** The stem cell population according to ~~any preceding~~ claim 1 which does not require feeder layers during culturing thereof.

17. **(Original)** An isolated stem cell population capable of self regeneration and differentiation into ectodermal, mesodermal and endodermal cells, said population obtainable by:

(i) subjecting haemopoietic tissue to density gradient separation;

(ii) exposing low density cells to an affinity ligand for CD34;

(iii) recovering cells attached to said CD34 ligand;

(iv) exposing the $CD34^+$ subpopulation to tissue culture grade plastic; and

(v) recovering $CD34^+$ cells adherent to said plastic.

18. **(Original)** A culture comprising:

(i) a stem cell population wherein said stem cells are capable of adhering to tissue-culture grade plastic, capable of self regeneration and capable of differentiation into ectodermal, mesodermal and endodermal cells; and

(ii) a medium capable of supporting the growth of said stem cells.

19. **(Original)** A method of isolating a stem cell population wherein said stem cells are capable of adhering to tissue- culture grade plastic, capable of self regeneration and capable of differentiation into ectodermal, mesodermal and endodermal cells, which method comprises taking a sample of blood or bone marrow from a subject and extracting said cell population therefrom.

20. **(Currently amended)** ~~A~~ The method of ~~isolation as claimed in~~ claim 19 which comprises:

(i) subjecting haemopoietic tissue to density gradient separation;

(ii) exposing low density cells to an affinity ligand for CD34;

(iii) recovering cells attached to said CD34 ligand;

(iv) exposing the $CD34^+$ subpopulation to a solid support; and

(v) recovering cells adherent to said solid support.

21. **(Currently amended)** ~~A~~ The method according to claim 20 wherein the solid support is selected from tissue-culture grade plastic or glass.

22. **(Currently amended)** ~~A~~ The method as claimed in claim 19 ~~or 20~~ which further comprises a step of culturing said isolated population of stem cells.

23. **(Currently amended)** A method of producing a population of target cells which comprises culturing ~~a~~ the stem cell population as defined in ~~any of claims~~ Claim 1 ~~to 17~~ with a plurality of growth factors which causes differentiation of said stem cell population.

24. **(Currently amended)** ~~A~~ The method as claimed in claim 23 wherein the target cell is selected from the group comprising liver, pancreatic, haemopoietic, neuronal and oligodendrocytic cells.

25. **(Currently amended)** A method of culturing ~~a~~ the stem cell population ~~as defined in any one~~ of Claim ~~claims~~ 1 ~~to 17 which comprises~~, comprising contacting said population with a plurality of growth factors which promote and/or sustain proliferation of said stem cell population.

26. **(Currently amended)** A cell population produced by ~~a~~ the method ~~as claimed in any one~~ of Claim ~~claims~~ 19 ~~to 25~~.

27. **(Currently amended)** ~~A~~ The cell population as claimed in Claim 1 ~~any one of claims 1~~ 17 or ~~and~~ 26 wherein the cell is capable of surviving cryopreservation.

28. **(Currently amended)** ~~A~~ The cell population as claimed in any one of claims 1, ~~to~~ 17, or 26 ~~or 27~~ wherein ~~the~~ a genome of said cells has been altered by insertion of a region of a nucleic acid.

29. **(Original)** The cell population of claim 28 wherein the genome is altered by insertion of DNA using a DNA virus, RNA virus or a retroviral vector.

30. **(Currently amended)** A cell population as claimed in any one of claims 1, ~~to~~ 17, or 26 ~~or 27~~, wherein a portion of ~~the~~ a genome of said cells has been inactivated~~, e. g.~~ through the presence of an antisense nucleic acid molecule, a ribozyme sequence or an inhibitory RNA sequence.

31. **Cancelled**

32. **Cancelled**.

33. **(Currently amended)** A method of regenerating an organ or repairing a damaged organ of a patient which comprises administering to said patient cells according to any one of claims 1, ~~to~~ 17 or 26 ~~to 30~~.

34. **(Currently amended)** ~~A cell population or~~ The method according to ~~claim 32 or~~ claim 33 wherein the organ is selected from the group comprising the haemopoietic or immune system, liver, lung, pancreas, bone, cartilage, muscle, skin, brain or ~~nervour~~ nervous system and heart or circulatory system.

35. **(Currently amended)** ~~A cell population or~~ The method according to Claim 33 ~~any one of claims 32 to 34~~ wherein the cells are labelled with a traceable marker~~, preferably iron oxide or paramagnetic beads~~.

36. **(Currently amended)** A method of cell transplantation which comprises introducing into a subject the ~~a~~ cell population as claimed in any one of claims 1, ~~to~~ 17 or 26 ~~to 30~~.

37. **(Currently amended)** A method of screening an agent for its organo-specific effects by exposing the cells produced by the ~~a~~ method as claimed in claim 23 ~~or 24~~ to said agent.

38. **(Currently amended)** ~~A~~ The method according to claim 37 wherein the agent is a toxin suspected of organo-specific toxicity.

39. **(Currently amended)** ~~A~~ The method according to claim 37 wherein the agent is a drug or therapeutic suspected of organo-specific toxicity.

40. **(Currently amended)** ~~A~~ The method according to claim 37 where the agent is a drug or therapeutic agent suspected of beneficial organo-specific effects.

41. **(Currently amended)** An *in vitro* method of protein production which comprises culturing the stem cells of any Claim ~~one of claims~~ 1 ~~to 17~~ or a differentiated cell line derived therefrom and